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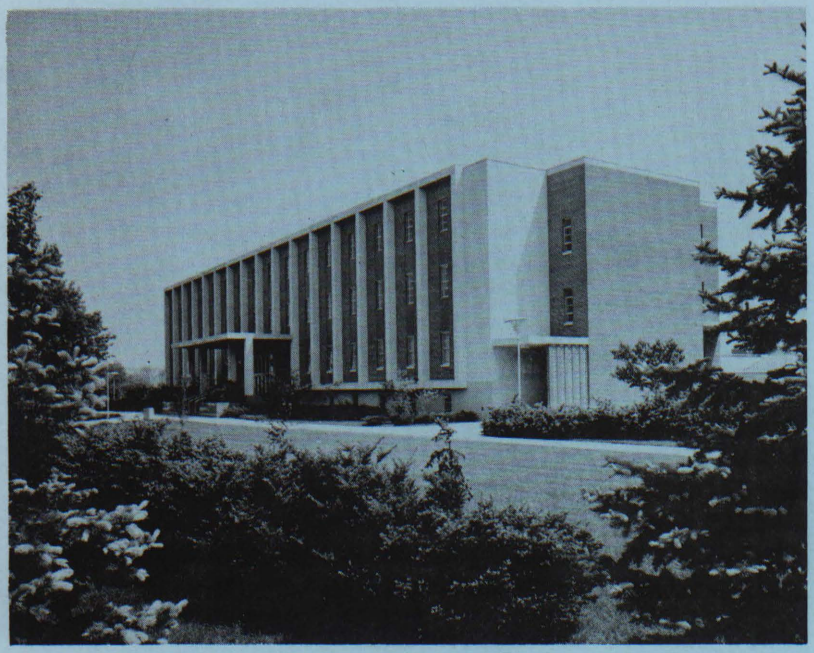
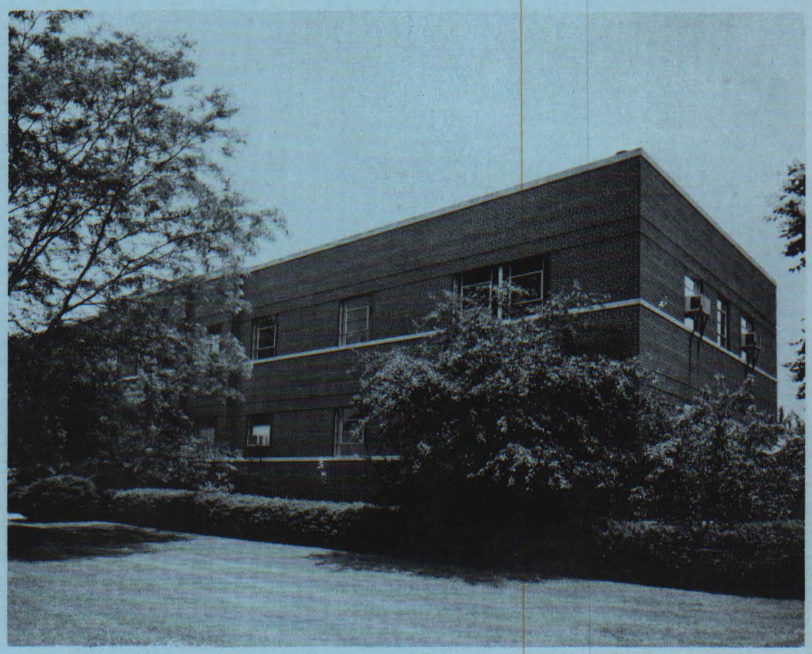


HOWLETT HALL
The Ohio State University

Graduate Studies Handbook

Department of Horticulture
The Ohio State University and
Ohio Agricultural Research and Development Center



GOURLEY HALL
Ohio Agricultural Research and Development Center

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FOREWORD

This Graduate Studies Handbook has been prepared to both complement and supplement the Graduate School Handbook. Every graduate student in the Department of Horticulture should carefully read both documents. The Graduate School Handbook establishes minimum standards and a framework within which the Graduate Studies Committee of the Department has developed the Graduate Studies Handbook.

There are three policy statements within the Graduate Studies Handbook that exceed the minimums proposed by the Graduate School. These statements concern:

1. Time limit to complete M.S. degree.

2. Credit hours for Plan "B" M.S. degree.

3. Persons in attendance at Final Oral Examination.

These issues have been approved upon by the Graduate Faculty of the Department of Horticulture.

To facilitate progress toward an advanced degree, the Graduate Studies Committee and the Graduate School have promulgated forms for use in the various steps in graduate studies. For your edification, samples of these forms are reprinted in a separate appendix to this Graduate Studies Handbook. Some of these forms are utilized by the Graduate Studies Committee to insure reasonable progress towards a degree, while other forms are needed by the Graduate School to maintain records.

GRADUATE TRAINING IN HORTICULTURE

Horticulture is a broad and dynamic field encompassing many areas including production, utilization, and processing of fruits and vegetables for the everyday diets, as well as the production and utilization of flowers and ornamental plants for the beautification and enrichment of man's environment. The horticulturist draws upon the information generated through a number of specific disciplines and integrates this information into a total system designed to solve problems which occur within the various horticultural industries. The horticulturist is continually seeking ways and means whereby the various horticultural industries can fully capitalize on the individual opportunities that exist. The end result being to enhance the level of living within society.

Graduate training is that relatively short period of transition from a student to a teacher, researcher, extension specialist, or other related professional career. It is a period of advanced learning and research experience in a specific area of interest. There are minimum standards for the MS and PhD degree. However, during your period of advanced study you will be within an environment that you will probably never experience again. You will have more time for diverse activities and experimentation than you are likely to have in any later period. You should take full advantage of the environment and the opportunities that exist. Graduate study requires complete dedication and it is not an eight-to-five job.

In your advanced study you will be striving to reach a level of excellence within a prescribed area. Your program of study and course work are not rigid (although minimum requirements are prescribed), but rather developed by you and your guidance committee to assist you in reaching your career goals. You will also be responsible for developing and conducting a research program. The word "Master" in Master of Science and "Philosophy" in Doctorate of Philosophy should have meaning when you complete your graduate training program. No two graduate programs of study should be identical, but rather are specifically designed to meet the objectives and goals of the individual.

You alone can decide on the extent and quality of the educational and research experience gained from your graduate training program. Your initiative, more than anything else, will dictate how much, how far, and in what direction this training will take you. Unlike undergraduate studies, the graduate program is not based exclusively on your ability to earn good grades in organized course work. More important than grades is your participation in the entire horticultural program. Within your graduate program you are expected to develop an "appreciation" for the total broad field of Horticulture. This will not likely be accomplished through strictly formal studies, but will result after working closely with the staff and faculty of the department and other graduate students. You will find many exciting things going on within the department and it is to your benefit to become involved.

During the period of your graduate studies you will likely have the opportunity to participate in various Cooperative Extension Service activities. These experiences can be valuable to you later, as your career develops. Such activity is encouraged.

You will not likely be required to take many trips out into production areas or to processing plants, but these opportunities do exist. Express your interest

and faculty members will be more than willing to take you along with them as occasions arise.

Become aware of the varied programs of the department and offer to help students and staff members in the execution of their programs. Such experiences can be extremely valuable to you in developing the total appreciation of your chosen field of specialization.

Another aspect of graduate education is that the usual freedom during periods between terms will no longer exist. Instead, you will likely find yourself engrossed in research, literature reviews, or some other phase of your graduate program. If you are on an associateship, you may find yourself actively involved in the research and/or teaching programs of the department. Graduate study is more than a full-time occupation and what you get out of it in terms of preparation for a stimulating professional career will depend largely on what you put into it. Always keep in mind that you can never really know what experiences will be valuable in the future. Consequently, the more complete and varied these experiences, the better trained and qualified you will be.

Bear in mind that as you proceed through your graduate program and related activities you are, in fact, writing your own recommendations. The strengths of future recommendations by the faculty will depend upon you.

ADMISSIONS

Applicants must have a minimum grade point average of 2.7 on a 4.0 basis. Applicants should have adequate preparation in the fundamental sciences, plant sciences and/or food processing and technology areas. Individuals lacking adequate preparation may be conditionally accepted on the basis that selected undergraduate courses are completed during the first 3 quarters of the graduate study. The Department of Horticulture accepts only those students who show the potential to complete the requirements for the degree being sought.

All qualified individuals expressing interest in support monies should so inform the Graduate Chairman and the Chairman of the Departmental Graduate Studies Committee. All inquiries will be given serious and equal consideration for those graduate associateships available. The following will be considered by the departmental faculty in the evaluation process.

1. Overall academic potential as reflected by performance.

2. Background, experience, motivation and dedication to the specific area of interest.

3. Potential to excel in a specific area of interest.

4. Recommendations from faculty members.

All graduate associateship awards are made for a maximum of one year or part thereof, extending from July 1 through June 30. Associates may be reappointed for additional 1 year appointments effective July 1 to a maximum of 8 quarters for the Master's degree and 12 quarters for the Ph.D. degree. Through mutual agreement between the student and the Chairman of the Department, short-term appointments of less than 1 year may be made. Reappointment will be based on

previous achievement and effective discharge of assigned responsibilities. If a student is not to be reappointed, he or she will be notified in writing 60 days prior to the termination of the contract.

All graduate associateship holders are required to provide an average of 20 hours of service per week to the total programs of the department. Specific assigned responsibilities are at the discretion of the student's adviser and may or may not relate to the programs of the adviser of the associateship holder. These responsibilities are to be reported by all graduate students on the activities summary (See Appendix).

DEPARTMENT ORGANIZATION

The Department of Horticulture at The Ohio State University and the Ohio Agricultural Research and Development Center has a number of missions and responsibilities. An important phase of the total program is undergraduate and graduate instruction to prepare students to effectively assume leadership roles within the various horticultural industries, or to serve the horticultural needs of the people. Research programs of the department are primarily geared to generate information needed by the various horticultural industries of the state and nation. Some of these research efforts may be applied in nature, others may be designed to generate more fundamental information needed to further advance applied technology. Within the department there are strong extension programs to assist the horticultural industries and the people of Ohio in applying new technology generated through research.

The faculty of the department consists of 32 members, each with responsibilities in resident instruction, research, and/or extension. Most of the faculty have responsibilities in more than one area (See listing in back of this handbook). All faculty are available to assist and consult with students. A portion of the faculty of the department hold appointments with the graduate faculty. There are three categories of such appointments, Category I, Category II, and Category III. Functions of and Qualifications for each Category are given in the Graduate School Handbook (Section 3).

In addition to the laboratory, greenhouse, and field facilities available to the department on the Columbus campus, the department is also assigned laboratory, greenhouse, and field research areas at the Ohio Agricultural Research and Development Center (OARDC) in Wooster, Ohio (approximately 90 miles from Columbus). Nine full-time faculty of the department are located on the OARDC campus. All graduate students will formally register for their graduate programs on the Columbus campus, but have the option of going to OARDC to conduct their research if this arrangement best meets the required research needs.

At The Ohio State University and/or OARDC, the departments of Agricultural Economics, Agricultural Engineering, Agronomy, Biochemistry, Botany, Entomology, Food Science and Nutrition, Human Nutrition and Food Management, and Plant Pathology, among others, assist with the graduate study programs within the department.

Within the Department of Horticulture there is a Graduate Studies Committee which consists of not less than five (5) members of the graduate faculty. This committee is the executive committee of the graduate faculty of the department and as such, makes recommendations to the faculty concerning graduate education within the department.

The principal fields of specialization and research are Floriculture, Landscape Horticulture, Pomology, Olericulture, and Food Processing and Technology. Certain horticultural courses offered by the department are taken by graduate students regardless of their area of specialization. The Department of Horticulture also participates in an Interdepartmental Plant Physiology option with cooperators in the Departments of Agronomy, Biochemistry, Botany, and Food Science and Nutrition.

Within the production fields, special attention is given to plant nutrition, physiology, biochemistry, growth and plant development, tissue culture, plant breeding and propagation, and anatomical and cytological problems specifically related to the culture of horticultural plants. Chemical weed control and the postharvest physiology of fruit, vegetable, flower, and ornamental plantings have been allotted increased emphasis as changes in these fields demand. Attention is also directed toward marketing. In food processing and technology, quality evaluation and control, improvement of processed foods, microbiology and the study of specific unit operations as related to process efficiencies, receive emphasis. The effects of plant characteristics on processing requirements and grade relationships are likewise considered, and appropriate attention is given to preservation methodology. Close association between production and processing is particularly beneficial to interested graduate students.

While a student will typically concentrate his studies in a specific field of specialization, he will find that many of the faculty have discipline training and background that provide them the opportunity to work and provide guidance in more than one specific area. Students are encouraged to get to know and seek technical help from as many of the faculty as possible.

ELEMENTS OF A GRADUATE PROGRAM

There are many elements within a total graduate program of study. The following are the more important within the Department of Horticulture.

GRADUATE PROGRAMS IN HORTICULTURE

Two options are open to the student wishing to pursue a Master's degree in the Department of Horticulture.

Plan A (Thesis option) requires that the student satisfactorily complete a minimum of 45 hours of graduate course work including research experience which culminates in the completion and oral defense of a thesis. Plan A is required of all students who hold graduate research associateships.

Plan B (Non-Thesis option) is permitted under certain conditions. Any request for this option is considered on its individual merit. It is generally considered to be a terminal degree program for those students who do not plan to pursue a career in research or for those who wish to change areas of specialization after the MS degree. A Plan B student must satisfactorily complete a minimum of 50 hours of graduate course work. He or she must also prepare and submit a critical review of a special subject in his chosen area of interest and orally defend it. In addition, he must perform satisfactorily on a comprehensive written examination of, at least, four hours duration and an oral examination of two hours duration.

Students wishing to pursue the PhD degree in Horticulture will be required to complete the equivalent of 135 hours of graduate study beyond the baccalaureate degree. In general, most Doctoral degree candidates accumulate in excess of 135 hours. Students holding the Master's degree from another institution may apply up to 45 credit hours of previously earned graduate credit hours toward the Ph.D. This credit may be obtained by writing the Chairman, Graduate Studies Committee.

Prior to admission to candidacy for the PhD degree, the student is required to pass a General Examination, prepared and administered under the direction of the appropriate graduate committee. This test is designed to determine the fundamental knowledge and preparation of the student in his or her chosen profession. Following satisfactory completion of the General Examination, the student is considered a PhD candidate and usually will have complete freedom from formal course requirements. At this time, the student registers for and completes his or her dissertation research. A final examination is held after the draft of the dissertation has been approved. This examination is oral and is generally considered to be the defense of the dissertation; however, it need not be confined exclusively to the subject matter of the dissertation.

The Department of Horticulture will admit students with the approval of the Chairman, Graduate Studies Committee, as a graduate non-degree (Graduate School Handbook 4-4-3).

MAJOR ADVISER

The key individual in the development of any graduate program is the major adviser. The adviser has the responsibility to help the student plan a program of study that will provide him or her the opportunity of reaching a prescribed level of excellence. An effort is made to place students with a faculty member who has similar research interests. This is done when your application is reviewed within the Department. Your major adviser, however, may have been determined by your acceptance of an associateship or fellowship. It is important to recognize that the adviser is to advise and counsel and he is not to "carry" the student. It is the responsibility of the student to achieve the prescribed level of excellence with the adviser directing the way.

The adviser is assigned by the Chairman of the Graduate Studies Committee prior to the student's arrival on campus. The assignment of the adviser is based on the interests and goals of the student, the source of funds if the student is provided financial assistance, the current workload and interest of the faculty of the department and the availability of facilities. In the assignment of the adviser every effort will be made to insure that the student has the best possible opportunity to achieve desired graduate program goals.

A student may change major advisers only after a complete review of the situation by the Graduate Studies Committee. The committee will make recommendations to the Chairman of the Department who will make the final decision. In many respects, however, it may be desirable for a change in advisers to occur between MS and PhD degrees.

Your major adviser may require that you spend a certain amount of your time assisting with his research programs as part of your associateship responsibilities. In addition, you may be called upon to assist the department

in its overall teaching effort by serving as a laboratory instructor in various undergraduate courses. This is a valuable experience and should be considered as training rather than "work". Such training may be essential in your research and will ultimately hasten its conclusion. In fact, you should seek such opportunities rather than holding back until your adviser requires you to do so.

GUIDANCE COMMITTEE

By the completion of the second quarter of graduate study, a Guidance Committee will be selected and approved by the Graduate Studies Committee. The composition of this committee will be determined by the student and his or her adviser. For the MS candidate, the Guidance Committee shall consist of at least one (1) member of the graduate faculty in addition to the major adviser. More typically, however, the MS Guidance Committee consists of the adviser and a minimum of two (2) additional members of the graduate faculty.

For the PhD candidate, the Guidance Committee shall consist of a minimum of three (3) members of the graduate faculty in addition to the adviser. Furthermore, one (1) or more members of the PhD Guidance Committee must be selected from qualified faculty members in departments other than Horticulture. Members of the PhD Guidance Committee are usually members of the final examining committee. In all instances the student's adviser will serve as Chairman of the Guidance Committee.

It is the function of the Guidance Committee to assist the adviser and student in developing an appropriate course of study and to review the detailed research proposal, once the preliminary plan has been outlined by the adviser and the student. The role of the committee members is to offer helpful suggestions toward the most effective execution of the research project.

You would work closely with your Guidance Committee. Frequent consultation with the members of the committee is essential, as they can provide you with valuable advice concerning your course selection, and the planning, conduct and interpretation of your research. The members of the Guidance Committee have agreed to serve in this capacity in order to strengthen your program and you will find that frequent consultation with them will bring excellent returns.

EXPLORATORY MEETING

Prior to the end of the student's second quarter of graduate study, an exploratory meeting will be held with the Guidance Committee. The purpose of this meeting is to determine the student's current level of competence and to serve as a guide in the development of a total plan of study to assist the student in achieving his or her determined career goals. The meeting will typically be an informal oral examination, but may also be preceded by a written examination at the discretion of the student's adviser. The meeting will be arranged by the student's adviser and will be conducted by the graduate faculty. At the time of this exploratory meeting, the student will also be advised as to his or her future potential for success in the graduate program.

PLAN OF STUDY

Within two (2) weeks after the exploratory exam, a complete Graduate Course of Study will be prepared by the student and his or her adviser. This plan will

include a schedule of courses to be completed and will be based upon the results of the exploratory exam and the recommendation of the Guidance Committee.

Students in the MS program will be required in their proposed Graduate Course of Study to meet the minimum requirements of the department. These programs are developed for the Plant Sciences, Food Processing and Technology, and Horticultural industries areas. Graduate students with the approval of their Guidance Committee, who want to deviate from the minimum requirements, may seek approval from the Departmental Graduate Studies Committee.

Students in the PhD program will be required in their proposed Graduate Course of Study to meet the minimum requirements of the department. Any deviation from the minimum requirements must be approved by the Guidance Committee and the Departmental Graduate Studies Committee.

PhD students participating in the Interdepartmental Plant Physiology Option must meet all departmental requirements in addition to those specified by this option.

MINIMUM REQUIREMENTS FOR THE MS DEGREE IN HORTICULTURE

A. PLANT SCIENCES

Agronomy and Botany Core - 1 course minimum
Botany 630 (3) - Plant Physiology
Botany 631 (3) - Plant Physiology
Botany 633 (3) - Plant Physiology Laboratory
Botany 634 (3) - Plant Physiology Laboratory
Botany 641 (5) - Morphology of Seed Plants
Botany 643 (5) - Developmental Plant Anatomy
Agron. 660 (5) - Soil Microbiology
Agron. 670 (3) - Soil Fertility
Agron. 672 (5) - Chemistry of Soils & Fertilizers

Horticulture (Required)
Horticulture 803 (2) - Research Principles & Techniques
Horticulture 804 (1) - Seminar

Horticulture Core - 1 course minimum
Horticulture 715 (5) - Application of Plant Cell, Tissue and Organ Culture to Horticultural Research
Horticulture 806 (3) - Morphological and Anatomical Studies of Horticultural Crops
Horticulture 813 (5) - Plant Nutrition
Horticulture 814 (5) - Physiology of Horticultural Plants
Horticulture 815 (3) - Postharvest Physiology

B. FOOD PROCESSING AND TECHNOLOGY

Microbiology - 1 course minimum
Botany 600 (3) - Mycology
Food Sc. & Nutr. 702 (5) - Spore-Forming Bacteria in Food
Food Sc. & Nutr. 703 (3) - Food Fermentations
Microbiology 736 (5) - Food Microbiology

Nutrition and Food Science - 1 course minimum
Food Sc. & Nutr. 621 (3) - Food Additives
Food Sc. & Nutr. 701 (4) - Food Contaminants & Toxicants
Hum. Nutr. & Food Mgmt. 615 (5) - Food Theory & Application
Hum. Nutr. & Food Mgmt. 816 (3) - Recent Developments in Food

Horticulture (Required)
Horticulture 803 (2) - Research Principles & Techniques
Horticulture 804 (1) - Seminar

Horticulture Core - 1 course minimum
Horticulture 742 (3) - Research & Development Technologies in the Food Industry
Horticulture 747 (3) - Technology of Fats & Oils
Horticulture 748 (3) - Technology of Plant Proteins
Horticulture 815 (3) - Postharvest Physiology
Horticulture 841 (5) - Advanced Food Processing & Technology

C. HORTICULTURAL INDUSTRIES

Accounting, Statistics & Economics Core - 2 course minimum
Accounting 711 (5) - Introduction to Management Accounting
Agr. Econ. 705 (3) - Economics of Agricultural Production
Bus. Mgmt. 601 (4) - Business Statistics
Bus. Mgmt. 801.01 (3) - Quantitative Methods - Deterministic
Bus. Mgmt. 801.02 (3) - Quantitative Methods - Stochastic
Economics 705 (4) - Micro-Economics Theory Survey
Economics 844 (3) - Managerial Economics
Statistics 528 (3) - Data Analysis I
Statistics 529 (3) - Data Analysis II

Horticulture Core (Required)
Horticulture 803 (2) - Research Principles and Techniques
Horticulture 804 (1) - Seminar

Business Finance, Marketing & Management Core - 2 course minimum

Bus. Fin. 620 (4) - Business Finance
Bus. Fin. 720 (3) - Corporation Finance
Bus. Fin. 721 (4) - Managerial Finance
Bus. Mkt. 850 (3) - Advanced Marketing
Bus. Mkt. 854 (3) - Consumer Behavior
Bus. Mgt. 630 (4) - Intro. to Production & Operations Mgmt.
Bus. Mgt. 691 (3) - Decision Science: Managerial Applications
Bus. Mgt. 731 (4) - Production & Operations Management 1
Bus. Mgt. 732 (4) - Productions & Operations Management 2
Bus. Mgt. 795 (3) - Management of New and Small Enterprises

Horticulture Option

Horticulture 715 (5) - Application of Plant Cell, Tissue & Organ Culture to Horticultural Research
Horticulture 806 (3) - Morphological & Anatomical Studies of Horticultural Crops
Horticulture 813 (5) - Plant Nutrition
Horticulture 814 (5) - Physiology of Horticultural Plants
Horticulture 815 (3) - Postharvest Physiology
Horticulture 742 (3) - Research & Development Technologies in the Food Industry
Horticulture 747 (3) - Technology of Fats & Oils
Horticulture 748 (3) - Technology of Plant Proteins
Horticulture 841 (5) - Advanced Food Processing & Technology

MINIMUM REQUIREMENTS FOR THE PHD DEGREE IN HORTICULTURE

Horticulture (Required) - 4 hours minimum

Horticulture 803 (2) - Research Principles & Techniques
Horticulture 804 (1) - Seminar

PhD students are expected to make two (2) seminar presentations and must register for seminar in two (2) different quarters.

Horticulture Core - 1 course minimum

Horticulture 715 (5) - Application of Plant Cell, Tissue & Organ Culture to Horticultural Research
Horticulture 742 (3) - Research & Development Technologies in the Food Industry
Horticulture 747 (3) - Technology of Fats & Oils
Horticulture 748 (3) - Technology of Plant Proteins
Horticulture 806 (3) - Morphological & Anatomical Studies of Horticultural Plants
Horticulture 813 (5) - Plant Nutrition
Horticulture 814 (5) - Physiology of Horticultural Plants
Horticulture 815 (3) - Postharvest Physiology
Horticulture 841 (5) - Advanced Food Processing & Technology

A timetable of the proposed total program will also be prepared at this time. The plan of study and the timetable will be submitted to the Graduate Studies Committee for approval and inclusion in the student's file. The plan of study shall become the minimum requirement for graduation. All members of the student's Guidance Committee will approve the student's graduate course of study.

PhD GENERAL EXAMINATION

Students working toward the PhD degree are required to successfully complete a general examination prior to admission to candidacy for the doctoral degree. This exam is to be a comprehensive test of the student's mastery of the subject matter, his ability to think and express himself clearly and forcibly, and his capacity to pursue independent research. It is both written and oral and not limited to courses taken. This examination shall be administered by not less than 4 members of the graduate faculty with the student's adviser as Chairman and including a Graduate School representative selected by the Dean of the Graduate School.

In the Department of Horticulture, the examining committee may be the student's Guidance Committee and must include at least one qualified faculty member from a department other than Horticulture. Members of the examining committee must be approved by the Departmental Graduate Studies Committee prior to the examination. The candidate is expected to send each member of this committee an up-to-date copy of his or her transcript prior to the examination.

The time and date of the General Examination shall be announced in the form of a memo to the faculty of the department, 2 weeks prior to the examination. The general examination shall be taken following the completion of the majority of the formal course work. As stated in the Graduate School Handbook, this examination is open only to the members of the Examining Committee (9-7-15).

The PhD General Examination will probably be the most comprehensive testing of the student's knowledge and understanding that he or she will ever undergo. Not only it is important that the student demonstrate a thorough mastery of the specific subject matter within his or her chosen discipline, but he or she must demonstrate the ability to utilize this knowledge in problem solving situations. In other words, he or she must show how individual items fit together.

The purpose of this examination is to ensure that the student is competent in his or her chosen field of specialization and can be expected to successfully conduct the research outlined in the dissertation research proposal. The outcome of the PhD General Examination is either pass of fail. In the case of a failure, the student may be given the option of a second examination, at the discretion of the examination committee.

It is desirable that students earn an MS degree before pursuing a PhD degree. If the student elects to pursue the PhD degree without obtaining the MS degree, then he or she shall take and pass a written and oral qualifying examination to insure that satisfactory progress is being made in the program. This examination shall be taken no later than the end of the second year of graduate study. The General Examination may serve this purpose.

RESEARCH PROPOSAL

Prior to the active initiation of research in partial fulfillment of the requirements for an advanced degree, a proposal is to be developed by the student in consultation with his or her adviser. This proposal should be presented by the student to the Guidance Committee at a meeting held for this purpose to obtain their recommendations and approval. The approved research proposal along with the Abstract form is then submitted to the Graduate Studies Committee. The

Graduate Studies Committee will review and acknowledege the abstract. The complete proposal is placed in the student's file maintained in the Office of the Chairman of the Graduate Studies Committee. The proposal should be filed no later than the beginning of the third quarter of enrollment in a graduate program. Failure to meet this deadline may result in the denial of further registration in the program. No research shall be conducted prior to submitting the Research Proposal Abstract to the Graduate Studies Committee.

The project proposal should include the following:

Title -

The Title should be descriptive of the research.

Introduction

This should be a clear statement as to the importance and need of the study. This statement should not be over one double-spaced typewritten page.

Review of Literature

A brief, yet sufficiently detailed discussion to show that the student is familiar with the current state of the literature in the specific area of proposed research.

Objectives

One or more short statements concerning the principal objectives of the study.

Procedure

A detailed and clear outline as to how the student plans to proceed to satisfy the objectives of the study. Include treatments, replication, analytical techniques and other pertinent information. A tentative timetable, sequence of events and proposed budget of direct costs including equipment and supplies is also suggested.

FINAL EXAMINATIONS FOR MS AND PhD DEGREES

Master of Science

For the Plan A, MS degree, the student's examination is held after the submission of the thesis. This examination may be written or oral or both, at the option of the Master's Examination Committee. For a Plan B program, the MS student in the Department of Horticulture is required to take an examination which must include a written examination designed by the student's Examination Committee to last not less than 4 hours plus an oral examination, typically 2 hours in duration.

The outcome of the MS examination is either satisfactory or unsatisfactory. A student who fails may be given the opportunity to retake this examination once.

Doctor of Philosophy

For the PhD degree, the Final Oral Examination is open to all members of the department Graduate Faculty. Traditionally, this examination is described as a "defense of the dissertation", and generally the research on which the dissertation is based provides the starting point of the questions posed. Discussion need not be limited to the dissertation research.

It is the general practice for questioning in the Final Oral Examination to pursue lines of thought and argument from data and concepts that have been contributed by the research and to its critical evaluation by the student. This broadening of the base is acceptable for the purpose both of "defending the dissertation" and of determining the intellectual qualifications of the candidate for the degree. Inasmuch as the PhD degree is conferred on the basis of originality, independence of thought, and capacity to synthesize and interpret, the Final Oral Examination generally deals with principles and historic perspective rather than the factual data. The student presents himself or herself for an academic degree of high order, and the Final Oral Examination should be conducted on a corresponding plane of intellectual inquiry. The examination itself is not a routine exercise to be taken lightly by the student or examining committee, but one of which depends on the issue of qualification for a degree having the broad connotation of Doctor of Philosophy. In judging the qualification for a degree of this type, the quality of the research presented, as well as its defense and evidence of associated intellectual capacity, are seriously taken into account.

The outcome of this examination shall be satisfactory or unsatisfactory. The Graduate Studies Committee has indicated that the student has successfully completed the Final Oral Examination when there is not more than one negative vote.

If the outcome is unsatisfactory, the Examination Committee may decide as follows:

1. The failure to pass be recorded and conveyed to the Graduate School. In this case, the Examination Committee may recommend another opportunity for examination following additional research and/or study.

2. The failure is final.

Under no circumstances is a student permitted a third examination.

Application to Graduate

Candidates for either the MS or PhD degree must file an "Application to Graduate" by no later than the second Friday of the Quarter in which graduation is expected (Graduate School Handbook, 8-11-1, 9-12-1). This application is valid for one (1) quarter only.

SUBMISSION OF THESES AND DISSERTATIONS

Five weeks prior to Final Examination for the MS or PhD degree, a final draft of the thesis or dissertation is to be submitted to the student's adviser. This draft should be what the student and his or her adviser consider to be an acceptable presentation. The adviser will review and make appropriate suggestions. Once these suggestions have been incorporatd, the thesis or dissertation is to be circulated to the departmental Reading Committee for further input. The adviser will select a Reading Committee to consider the merit of the thesis or dissertation. This committee will consist of the adviser and two (2) other members of the departmental Graduate Faculty approved for this function.

The suggestions of the Reading Committee should be included in the draft prior to putting it into final form for final typing. Copies must be made available to the Examining Committee at least 1 week prior to the final examination. Immediately after the final examination, the thesis or dissertation may be prepared in "final" form for submission to the Graduate School, if the document is deemed acceptable.

The above schedule has been established to insure that there be adequate time for all involved to provide as much assistance as possible in helping the student develop a thesis or dissertation of which he or she and all concerned can be proud.

PUBLICATION OF THESIS OR DISSERTATION RESEARCH

Research is complete only after the results of that research have been published and transmitted to those that may have interest in, or use for, the results. All graduate students are requested to prepare 1 or more manuscripts suitable for appropriate publication. The type of publication and the appropriate place for publication will be determined by the adviser in counsel with the student, but in all cases shall be of the refereed type.

SEMINARS

Seminars are an integral part of the total academic atmosphere within the department. A departmental Seminar Committee, consisting of 3 faculty and 2 graduate members, develops the seminar program for the academic year. Seminars are presented by outside speakers, Horticulture faculty, and graduate students, with emphasis on the latter. Typically, seminars are scheduled at noon on Fridays, with everyone bringing a "sack lunch". It is one of the few opportunities staff and students of the department have to meet and exchange ideas.

One of the principal features of seminar is to provide students an opportunity to refine communicative skills. The ability to communicate effectively with colleagues and lay people is extremely important in the development of any professional. Seminars provide a clearer picture of the total scope and breadth of departmental programs. They also present the student the opportunity to receive constructive suggestions concerning individual research and presentation techniques.

Not everyone benefits to the same degree from all seminars, but the student should not look lightly on the value of the experience obtained from presenting a seminar. When interviewing candidates for a position, it is not uncommon for a

Department Chairman to request that he or she present a seminar on his or her dissertation work before the staff of that department. The quality of that seminar typically is very important to the success of the candidate.

Seminar will be held throughout the year. All graduate students are required to attend all seminars. All faculty are urged to place priority on attending seminar and actively participating, although seminar in Horticulture is a student course inasmuch as the majority of the presentations will be made by graduate students.

Each MS student will present one seminar, generally at or near the completion of his or her program. It is the student's responsibility to register for and consult with the Chairman of the Seminar Committee to find an appropriate time for scheduling the seminar. The PhD student is expected to present 2 seminars--1 typically at the initiation of his or her program and 1 at the completion of the research.

Students may register for Seminar for credit only in the quarter during which the student would make his or her presentation. The grade for the course will be based upon the quality of the presentation. A summary of the evaluation of the student's performance in Seminar will be made available to the student by the Chairman of the Seminar Committee.

Subject matter for the seminar relates to the student's research problem. The student should obtain approval of his or her general seminar topic from both his or her major adviser and the Chairman of the Seminar Committee before proceeding to prepare the full content of the seminar. At this time an abstract of the Seminar is to be prepared and distributed to graduate students and faculty of the department.

CREDIT LOADS

Within the following credit load ranges, students holding Graduate Associateship appointments of various types are considered to be making normal progress toward a degree. Students are not encouraged to carry academic loads above or below these limits, although exceptions may be permitted when good reasons are presented. The lowest normal load is the minimum which the department requires each student to carry.

Employment Schedule

University Appointment (departmental hours of employment)	Load in Quarter Hours		
	Minimum	Normal	Maximum
No appointment	1*	15	18
1/2 time associateship (20 hr)	7	11	14
3/4 time associateship (30 hr)	7	7	11
Fellowship	12	15	18
Foreign Students	12	15	18

*Students must be registered for at least 3 credit hours the

quarter in which graduation is expected (Graduate School Handbook 8-5). Students receiving veteran's benefits see Graduate School Handbook 5-1-4.

GRADUATE PROGRAM TIME LIMITS

A candidate for the MS degree must complete all the requirements for the degree within a period of 4 calendar years after the first registration in the Graduate School or petition the Graduate Studies Committee to be allowed to continue in the program.

A candidate for the PhD degree must complete the General Examination within 5 years of the initiation of graduate study at this university. When the candidate has an MS degree from this university or elsewhere, the General Examination must be completed within 4 years.

A candidate for the PhD degree must complete the dissertation and Final Examination within 5 years after the General Examination or the admission to candidacy will be cancelled. (See Graduate School Handbook 9-8-1).

PERFORMANCE REQUIREMENTS

A graduate student must maintain a "B" average (3.00 on a 4.00 basis) in all work for his or her degree. Courses graded S/U do not count in cumulative point hour calculations but are counted towards total hours for the program.

If the student's academic average falls below the above standard, the Dean of the Graduate School will designate the student as "probationary" because of unsatisfactory grades, he or she may be denied registration in the Graduate School (Graduate School Handbook Section 7).

In the case that a student is dismissed from Graduate School, a petition for reinstatement will be considered by the Graduate Studies Committee. This petition should be submitted as indicated in the Graduate School Handbook (7-5).

The Graduate School Handbook has a statement concerning reasonable progress (7-6). The graduate faculty of the Department of Horticulture has further defined reasonable progress. To be considered as maintaining reasonable progress toward a degree, a student must successfully complete courses in which he or she is enrolled and make a satisfactory (S) grade in courses such as 993, 999, and other graded on the S/U system. An unsatisfactory (U) grade will result in the student being placed on probation by the Department of Horticulture, and if this grade is received two quarters in a row, the student may be denied further registration upon suggestion of the Graduate Studies Committee.

SEQUENCE OF PROGRAM

MS - Plan A

1. Registration as graduate student.
2. Major adviser assigned.
3. Guidance Committee selected and approved prior to the end of the of the second quarter of study.
4. Exploratory meeting prior to the end of the second week of the second quarter of study.

5. Total program of study prepared within 2 weeks after the exploratory meeting and submitted to Graduate Studies Committee for approval.
6. Research proposal developed and submitted to the Guidance Committee for approval.
7. Approved research proposal abstract submitted to Graduate Studies Committee.
8. Research proposal filed with Graduate Studies Committee Chairman.
9. Seminar
10. Submit a draft of thesis 5 weeks prior to Master's examination.
11. Complete thesis program.
12. Complete paper relating to research for publication.
13. Application to graduate filed with Graduate School.
14. Masters Examination Committee approved by Graduate Studies Committee.
15. Masters Examination (memo to the departmental faculty 2 weeks prior to the examination).

MS - Plan B

1. Registration as a graduate student.
2. Major adviser assigned.
3. Guidance Committee selected and approved prior to the end of second quarter of study.
4. Exploratory meeting prior to the end of the second week of the second quarter of study.
5. Total program of study prepared within 2 weeks after the exploratory meeting and submitted to the Graduate Studies Committee for approval.
6. Special subject proposal developed and submitted to the Guidance Committee for approval.
7. Approved Special Subject Proposal Abstract submitted to Graduate Studies Committee for review.
8. Seminar
9. Submit special subject project 5 weeks prior to Comprehensive Examination.
10. Completion of special subject project.
11. Application to graduate filed with Graduate School.
12. Written Examination
13. Oral Examination (memo to the departmental faculty 2 weeks prior to the examination).

PhD

1. Registration as a graduate student.
2. Major adviser assigned.
3. Guidance Committee selected and approved prior to end of second quarter.
4. Exploratory meeting prior to the end of the second week of the second quarter of study.
5. Program of study prepared within 2 weeks after the exploratory meeting and submitted to Graduate Studies Committee for approval.
6. Research plans developed and project proposal submitted for review and approval of the Guidance Committee.

7. Approved research proposal abstract submitted to Graduate Studies Committee for review.
8. Research proposal filed with Graduate Studies Committee Chairman.
9. Seminar
10. Completion of formal course work and residence requirements (Graduate School Handbook 9-5-4).
11. Examining Committee approved by Graduate Studies Committee.
12. General Examination (memo to departmental faculty 2 weeks prior to the examination).
13. Completion of research and 20 hours of 999 for completion of residence requirements.
14. Seminar
15. Application to graduate filed with Graduate School.
16. Submit a draft of dissertation to the adviser 5 weeks prior to the Final Oral Examination.
17. Completion of dissertation
18. Preparation of research results suitable for appropriate publication.
19. Final Oral Examination (memo to departmental faculty 2 weeks prior to the examination).

At the completion of the MS-Plan A or PhD program, it is the responsibility of the student to present 1 bound copy of his or her thesis or dissertation to the Department of Horticulture to become a part of the permanent collection of the department. This bound copy is to be presented to the Graduate Studies Committee Chairman for safekeeping. Theses on file may be borrowed by students for reference. Your adviser may also request a copy of your thesis or dissertation for his or her personal file.

GENERAL INFORMATION

Certain departmental guidelines and policies have been established to best serve the interests of those students involved and those that are providing the resources needed to make graduate study programs possible.

FINANCIAL SUPPORT

Within the department there are several sources of financial support available. They include Graduate Teaching Associateships supported through The Ohio State University; Graduate Research Associateships, supported by the Ohio Agricultural Research and Development Center; Graduate Research Associateships, supported by various individual funds made available from interested horticultural groups; and Graduate Fellowships. These monies are not gifts, but rather monies to provide those most worthy candidates the opportunity to continue advanced studies. In return for this financial support, the student assumes important obligations.

Those students supported as 1/2 time Graduate Teaching or Research Associates assume the obligation of providing 20 hours per week or approximately 1000 hours per year of service to the department. The specific nature of this service is determined by the student's major adviser and approved by the department Chairman. Support for students not living up to assumed responsibilities may be terminated.

In the awarding of financial support for graduate study, there are always many more applicants than support monies. Consequently, a careful evaluation of each applicant is made and offers extended to those candidates that show the greatest potential for further study and for the use of the knowledge gained. The department does not assume the responsibility for giving priority to those students that are already in the program at their own expense. Acceptance for graduate study in the department is not considered to be a commitment for present or future financial support.

PROFESSIONAL MEETINGS

The department encourages students to attend professional meetings in the area of their interest, but has no obligation to reimburse students for their expenses.

OFFICE, LABORATORY, GREENHOUSE AND FIELD RESEARCH SPACE

The department will attempt to furnish office space. This space will be provided on a seniority basis and will be arranged by the Graduate Studies Committee Chairman. Students are not to change office locations without prior approval of the Graduate Studies Committee Chairman. The names of the students occupying the office space should be posted on the door.

You will have a telephone near your office. The number of that phone is the one to list as your office phone and the one for you to use normally. This telephone is restricted to local calls only. Calls to an adviser located in Wooster can be made using the local number of 2-0861 or 2-0868. This number reaches the switchboard of OARDC and by asking for the Department of Horticulture, contact can readily be made. A mail box will be provided for each graduate student. Please check it regularly. Seminar notices, as well as other important information, are frequently placed in your mailbox.

Keep your office and other assigned space neat. Be professional and do not disturb others.

There are many laboratories and other research facilities assigned to the department. In each case, the facility is the responsibility of a specific faculty member. The facilities are available for graduate student use, however, arrangements for their use must be made through the student's adviser and the faculty responsible for the facility. It is very important that the person responsible for the facility give approval for its use and be kept completely informed of programs and projected use. Always leave the laboratories and other areas you use clean and orderly.

Arrangements for greenhouse and field research space are made through the student's adviser. Students are responsible for their field and greenhouse plots and should do their own harvesting and collecting of data. Problems associated with planting, spraying and the like should be discussed with their adviser.

Growth chambers are available for graduate student use, however, permission must be obtained. Consult with your adviser.

MATERIALS, SUPPLIES AND KEYS

The copy machine can be used for research purposes if the material to be copied has been approved by your adviser. No class notes, theses, or personal items are to be copied.

All supplies such as graph paper, pens,pencils, record books, notebooks or reprint request cards are to be obtained from the student's adviser. Approval for use of the Mechanized Information Center and computer facilities must also be obtained from the student's adviser.

All typing must be approved by the major adviser. Secretaries are not to type class notes, term papers, thesis proposals, job applications or other personal papers on university time. Similarly, use of metered mail is prohibited except for official business.

Keys for laboratories, graduate offices and greenhouse areas are available only when requested by the adviser. All key requests to Key Control are made through the Secretary in the Chairman's office. Upon leaving the department at the completion of your program, return all keys to Key Control to obtain your refund.

ABSENCE FROM DUTY

Graduate students receiving financial support are authorized 10 working days leave per year. Specific plans, however, must be first approved by the student's adviser. Leave should not be taken at times that would hamper the progress of the specific program in which the student is involved or the departmental program that relates to the student's assigned departmental responsibilities.

REPORTING GRADUATE STUDENT ACTIVITIES

The Graduate Studies Committee has promulgated a form for reporting graduate student activities quarterly. All graduate students in the Department of Horticulture will complete this form at the end of each quarter and submit it to the adviser for signature. The form is then returned to the Graduate Studies Committee Chairman's Office. Forms are available in the Graduate Studies Committee Chairman's Office along with guidelines of activity codes to be used in completing the form.

SECURITY

As a graduate student in the department, you have rights and privileges, but you also have responsibilities. Each student should assume the responsibility for security of the building, laboratories, and other facilities. If the doors are to be locked, make certain they are locked. Be alert to strangers; we have had thefts in the past.

GRADUATE STUDENT GRIEVANCES

If a graduate student has concerns, questions, or grievances regarding any phase of the programs, policies, and practices within the graduate study program of the department, these matters should be brought to the attention of the Graduate Studies Committee, via its Chairman, for consideration and appropriate action.

Resolution and grievances by graduate associates or their faculty adviser(s) should be sought initially through mutual discussion. Those complaints that cannot be resolved in this way should be reported in writing through the Chairman of the Graduate Studies Committee or the Chairman of the Department to the Graduate Studies Committee.

The graduate associate has the right to be present when the Graduate Studies Committee reviews his or her grievance. All grievances involving graduate associates may be appealed to the department Chairman. If such discussions at the department level fail to provide a resolution of the grievance, the grievance procedures established by the Graduate School should be followed. Copies of such procedures are available in the departmental graduate office and in the Graduate School Office.

SUGGESTIONS FOR GRADUATE STUDENTS

The graduate program of study is designed to provide the student the opportunity to achieve a high degree of competence as he or she prepares for a professional career. Throughout the program the student is being evaluated, both formally and informally. Grades attained in formal courses are important but represent only a part of the total. Typically, the most in-depth evaluation of the student's overall professional competence comes in relation to the general and final examinations and the thesis or dissertation presentation. It is thus very important that the student do as good a job as possible in demonstrating his total competence. The following are but a few general suggestions that will hopefully prove useful.

PREPARATION FOR ORAL PRESENTATIONS

Well in advance of the examination, make plans to visit with each member of the examining committee and to facilitate preparation for the examination. You may not have had a course with this instructor. He or she may be examining for something different than you might expect. Prior to the examination, it is also important that you discuss it thoroughly with your adviser. It is certainly appropriate to ask him specifically how the examination will be conducted. He may typically have helpful suggestions. You should also feel free to make suggestions such as who you would like to have initiate the questioning, etc. Your adviser will be the Chairman of the examining committee.

Remember there are several ways to respond to a question:

1. Give the correct answer.
2. Ask for clarification of the question. It may not have been worded so that you would give the best answer. Also this will give you time to think.
3. "I don't know" is an acceptable answer. The examiner may not let an "I don't know" answer stand. He may try to lead you to the answer with other questions.
4. The question may call for a speculative answer. If so, speculate. You may need more information before your answer, if so, ask for it.
5. Remember, "The Committee wants to help you". The examining committee feels as badly as you if you do not do well. They have no use for your "hide" and everyone feels best if you keep it intact with a good performance.

Do whatever is possible to reduce your nervousness. Being nervous will interfere with your conduct and response to questions. If during the examination you need or want to do something to accomplish this, ask your adviser if this is permissable. If the examining faculty is doing something such as having a cup of coffee, or smoking, that will help you, feel free to do likewise. Do not let silence frustrate you.

For the Final Oral Examination on the thesis or dissertation you should be prepared to review briefly:

1. Reasons for the study - scientific or practical implications.
2. Methods used for the important findings and their significance.
3. Summarize or highlight principle results.
4. Unanswered problems suggested by your research or in other words, "What's next?"

GRADUATE COURSES OFFERED IN HORTICULTURE

UNIVERSITY NUMBER	CREDIT (HR)	QUARTER OFFERED	TITLE
601	3	W	Horticultural Plant Breeding
610	4	A	Weed Control in Hort. Plants
611	3	A	Tropical & Subtropical Fruit & Vegetable Production
631	5	A	Arboriculture
640	5	A	Food Regulations & Product Examination
641	5	Su	Horticultural Food Processing & Technology
645	3	W	Fermented Plant Product Technology
649	3	W	Packaging Materials & Methodology
653	3	W	Processing Technology of Cereal Grains & Related Foods
670	4	A	Enology I-Principles & Wine Tech.
671	4	S	Enology II-Wine Quality & Evaluation
692	1-2	A,W,S,Su	Workshop in Horticulture
692.01			Landscape Horticulture
692.02			Floriculture
692.03			Pomology
692.04			Vegetable Crops
692.05			Fruit & Vegetable Processing
694	1-5	A,W,S,Su	Group Studies
715	4	A	Application of Plant Cell, Tissue, and Organ Culture
742	3	S	Research & Development Technologies
744*	3	A	Thermal Processing of Canned Foods
747*	3	W	Technology of Fats & Oils
748*	3	A	Technology of Plant Proteins
803	2	A	Research Principles & Techniques
804	1	A,W,S,Su	Seminar
806	3	W	Morphology & Anatomical Studies
813	5	W	Plant Nutrition
814	5	A	Physiology of Horticultural Plants
815	3	S	Postharvest Physiology
841	5	Su	Adv. Food Processing & Technology
993	1-5	A,W,S,Su	Individual Studies
999	1-15	A,W,S,Su	Thesis or Dissertation Research

*Offered in alternate years

HORTICULTURE THESES & DISSERTATIONS

The following is a list of students who have recently completed advanced degree requirements in the Department of Horticulture, 1978-1982, giving thesis title, plan B option or dissertation title and major adviser.

Name & Degree	Thesis Title/Plan B/or Dissertation Title (Adviser)
Mary Albrecht, PhD	Chemical Characteristics of Composted Hardwood Bark in Relation to Decomposition & Plant Nutrition (H.K. Tayama)
Mohammed Hasan Ali, PhD	Some Studies on Functional Properties and Characteristics of Soybean Protein (A.C. Peng)
Sidikat Andu, MS	The Production of Processed Plantain Chips from Ripe and Unripe Plantain (W.A. Gould)
Jerry J. Baron, MS	Polyethylene Mulches: Their Influence on Soil Atmospheric CO Concentration & Subsequent Assimilation by Eggplant (Solanum melongina L.) Roots (S.F. Gorske)
Atallah A. Baroudi, PhD	Evaluation of Factors Affecting Color and Acceptance of Potato Chips (W.A. Gould)
Carol Rae Barton, PhD	Endogenous Gibberellins in Chrysanthemum x morifolium 'Royal Trophy':Qualitative and Quantitative Effects of the Growth Retardant 1,1 Dimethylaminosuccinamic Acid (B-Nine) (H.K. Tayama)
Richard Basel, MS	Properties of Selected Organisms on Spoilage in Various Tomato Juice Formulation (W.A. Gould)
Richard Basel, PhD	Acidified and Controlled Atmosphere Bulk Storage of Horticultural Food Commodities (W.A. Gould)
Lisa K. Bauman, MS	An Analysis of Factors Associated with the Fortification of Popcorn (W.A. Gould)

Name & Degree	Theses or Dissertation Title (Adviser)
Denise Baun, MS	An Evaluation of the Impact of Applications of Various Pesticides and Pesticide Components on the Growth and Development of Selected Greenhouse Floral Crops (J.C.Peterson)
Parvin Bayat, MS	Plan B (J.R. Geisman)
Masomeh Beigum Behrouz, PhD	Shoot Multiplication and Photomorphogenesis in the In Vitro Culture of Amelanchier laevis (R.D. Lineberger/J.R. Geisman)
Hashmy Mohamed Bel-Haj, PhD	Effect of Cultivar,Chopping Particles, Breaking Temperature, and Extraction Method (Single and Double Extraction) on the Viscosity of Tomato Juice (W.A. Gould)
Narayana R. Bhat, PhD	Performance of Ancymidol as Influenced by Pine Bark in the Container Media (H.K. Tayama)
Elizabeth Anne Boyne, MS	The Effect of Manganese and pH on the Growth Rate of Acer rubrum Cultivars (T.D. Sydnor)
Mark P. Bridgen, MS	Low Pressure and Controlled Atmosphere Storage Plant Tissue Cultures (G.L. Staby)
Timothy K. Broschat, PhD	Relationships Among Slow Release Fertilizer Application Rates, Soil and Foliar Levels, and Plant Quality in Garden Grown Salvia splendens Sello (H.K. Tayama)
Janice L. Buehler, MS	The Relationship of Tomato Solids to Tomato Juice Consistency (W.A. Gould)
Jacquelyn S. Caplinger, MS	Formulation of an Acceptable Coated Tomato Hors d'oeuvre (W.A. Gould)
Johnny Carter, PhD	Effect of Night Air Temperature, Root Zone Heating,Carbon Dioxide Enrichment and Viterra Hydrogel Amendments on the Greenhouse Tomato (Lycopersicon esculentum Mill) (D.W. Kretchman)

Name & Degree	Theses or Dissertation Title (Adviser)
Cynthia D. Chandler, MS	Determination of Cadmium and Zinc Toxicity in the Picea abies, L., Acer rubrum, L. and Pinus strobus, L. (T.A. Fretz)
Amelia Y. Chang, MS	Plan B (A.C. Peng)
Ling-May Chen, PhD	Biochemical and Physiochemical Changes of Coleslaw from Cabbage When Treated With Acids and Metabisulfite During Manufacturing and Storing (A.C. Peng)
James R. Colleli, MS	Conversion of Agricultural Waste for Possible Feed Use (J.R. Geisman)
Robert M. Crassweller, MS	An Evaluation of Certain Ornamental Malus Species and Cultivars for Their Use as Pollinizers with Apples (D.C. Ferree)
Robert M. Crassweller, PhD	Some Physiological Responses and Problems in the Use of Sprinkling in the Production of Apples (D.C. Ferree)
Rebecca L. Darnell, MS	The Influence of Environment on Apple Tree Growth, Leaf Cuticle Structure, and Foliar Absorption (D.C. Ferree)
Warren D. Davenport, MS	Effectiveness and Potential Toxicity of Various Wetting Agents When Impregnated on a Soilless Potting Media (H.K. Tayama)
Jeffery A. Dickinson, MS	Methane Production from Cabbage Residues via Microbial Bioconversion (J.R. Geisman)
Diane S. Doud, MS	The Influence of Different Reflected Light Levels on Growth and Fruiting of 'Delicious' Apple Trees (Malus domestica, Bork.) (D.C. Ferree)
Barry A. Eisenberg, PhD	The Relative Contributions of the Cytochrome and the Cyanide Resistant Pathways of Respiration During Carnation (Dianthus carophyllos, L.) Flower Senescence. (G.L. Staby)
Jeffery Allen Erf, MS	Effect of Granular Herbicides on Newly Planted Brambles (D.C. Funt)

Name & Degree	Theses or Dissertation Title (Adviser)
Carol A. Erwin, MS	Screening Tomato Callus Cultures for Cold Tolerance: Investigations into the Possible Use as a Supplemental Selection System (J.R. Geisman and J. Scott)
James W. Erwin, MS	Market Structure and Strategies in Direct Marketing of Fruits and Vegetables in the Midwest (J.L. Robertson)
Hasan Fenercioglu, PhD	The Effect of Concentration Methods and Reconstitution on Tomato Juice Quality (W.A. Gould)
James G. Fox, PhD	The Use of Fluorescent Mold Counting Methodology for the Enumeration of Fungi in Tomatoes for Processing (W.A. Gould)
Peter W. Gallagher, PhD	Genetic Variation and Growth Regulator Effects on Wound Response Among Acer and Populus Taxa (T.D. Sydnor)
Timothy J. Gardner, MS	The Effect of Five Species of Shade Trees on the Interception of Winter and Summer Insolation (T.D. Sydnor)
Timothy L. Glaros, PhD	Factors Affecting the Fluorescent Staining Technique in Tomatoes (W.A. Gould)
Bradford L. Hair, PhD	Potato Tuber Maturity and Suitability for Processing (W.A. Gould)
Ferdinand V. Huber, MS	Relationship of Sucrose Content in Raw Potatoes to Color of Chips Manufactured from Stored Potatoes (W.A. Gould)
Nancy Hutchinson, MS	Conjoint Analysis of the Consumer Demand for Roses (J.L. Robertson)
Dennis Inkrott, MS	Plan B (W.A. Gould)

Name & Degree	Theses or Dissertation Title (Adviser)
Jon R. Johnson, MS	Influence of Harvest Frequency and Thoroughness on Yield and Returns from Pickling Cucumbers (Cucumis sativus L.) (D.W. Kretchman)
Nicholas N. Kallas, PhD	The Effect of Tomato Processing Extraction and Size Reduction Operations on Mold and Rot Fragment Counts. (W.A. Gould)
Robin G. Kaufman, PhD	Seasonal Trends in Quality of Tomatoes Harvested at Different Stages of Maturity (E.K. Alban)
John W. Kelly, MS	Thermal Neutron Irradiation of Saintpaulia. (R.D. Lineberger)
John W. Kelly, PhD	Cytokinin Studies on Senescing Carnation Flowers (G.L. Staby)
Jeff Kinzbach, MS	Development of Procedures for Precision Salt Application to Potato Chips (W.A. Gould)
Jeff Koncal, MS	Slow Release Herbicides for Weed Control in Container-Grown Nursery Stock. (S.F. Gorske)
Peter Konjoian, MS	Optimal Temperature Regimes for Bedding Plants (H.K. Tayama)
Peter Konjoian, PhD	The Growth and Development of Chrysanthemum morifolium in Low Oxygen Environments (G.L. Staby)
Lynn K. Krielow, MS	Introducing Malo-Lactic Fermentation in Ohio Red Table Wines with Freeze-Dried Cultures of Leuconostoc oenos, PSU-1 (J.F. Gallander)
Shang-Chuang Kuo, MS	Plan B (W.A. Gould)
Sharon Maraffa Kurtz, PhD	Selection of Salt-(NaCl) Tolerant Cell Lines of Lycopersicon esculentum Mill in vitro. (Lineberger/Geisman)
Abdussalam Laklouk, MS	Evaluation of the Culinary Quality of Boiled Potatoes as Influenced by Cultivar (W.A. Gould)

Name & Degree	Theses or Dissertation Title (Adviser)
Bryce Lane, MS	Influence of Extended Photoperiod and Fertilizer in the Propagation Media on Rooting and Subsequent Growth of Acer rubrum 'Red Sunset' (S.M. Still)
Jai-Fen Lee, MS	Glucose & Sucrose Analysis of Certain Ohio Grown Potato Cultivars During and Following Storage (W.A. Gould)
Phillip A. Lindsey, MS	Effects of Cadmium on Plant Cell Ultra Structure and Nitrogen Fixation (R.D. Lineberger)
Nancy J. Manring, MS	The Reconciliation of Man and Nature: An Integrated Approach to Landscaping and Ecological Reconstruction (J.R. Geisman)
Julie Martens, MS	Characterization of Malus Species and Cultivars Using the Scanning Electron Microscope (T.A. Fretz)
Charles H. Michler, Jr., MS	Freeze Preservation of Callus Cultures of Liquid Nitrogen (R.D. Lineberger)
Gregory A. Miller, MS	A Study of the Peroxidases and the Inheritance of Dwarf and Determinate Growth Habits in Cucumis sativus L. (W.L. George)
Jeff J. Modock, MS	Usefulness of the Chemical Dwell as an Inhibitor of the Nitrification Process in the Container Nursery Industry (S.M. Still)
Seif F. Mohamed, PhD	Effect of Metribuzin on Growth, Development, Yield, Quality, Chlorophyll Content of Leaves & Mineral Composition & Leaves & Fruits of Tomato (Lycopersicon esculentum Mill). (E.K. Alban)
John Mount, PhD	Factors Affecting the Solid Content & Its Variation in Canned Whole Tomatoes (W.A. Gould)

Name & Degree	Theses or Dissertation Title (Adviser)
Stephen C. Myers, PhD	Chemical Induction of Lateral Branches and the Influence of Gravimorphism and Summer Pruning on Apple. (D.C. Ferree)
Ralph T. Nicolosi, MS	Root Growth as Affected by Backfill Density and Soil-Backfill Interface Surfaces. (T.A. Fretz)
Ralph T. Nicolosi, PhD	Morphological Features of Leaves and Pollen as an Aid in Separating Selected Species and Cultivars Within the Genus Taxus (R.D. Lineberger/ J.R. Geisman)
Gail Romberger Nonnecke, PhD	Crop and Vigor Regulation of the French-hybrid Grapevine 'Seyval' (G.A. Cahoon)
Demetrio G. Ortega, Jr., PhD	Water Stress Effects on Cytokinins in the Fruit at Different Stages of Development of the Pickling Cucumber. (D.W. Kretchman)
David B. Riedinger, MS	Plan B (W.A. Gould)
Thomas H. Rieman, MS	Development of a Corn Fish Snack Food. (W.A. Gould)
Christopher F. Rizzo, MS	Quality of Woody Ornamental Plants as a Function of Overwintering Storage Techniques. (E.M. Smith)
Suzanne M. Rogers, MS	Selection of Nicotiana tabacum 'Wisconsin 38' Callus With Enhanced Cold Resistance (R.D. Lineberger)
Curt R. Rom, MS	The Influence of Time and Severity of Summer Pruning on Peach Tree Growth and Development. (D.C. Ferree)
Michael A. Ruizzo, MS	Tablets: A Slow Release Herbicide Formulation. (E.M. Smith, Jr.)
Hussain Salman, MS	The Effect of Plastic Mulches on the Productivity of Muskmelon, Tomato and Eggplant. (S.F. Gorske)

Name & Degree	Theses or Dissertation Title (Adviser)
John Scott, PhD	Breeding and Pollination Studies of Heterostylous Genotypes for Hybrid Seed Production in Lycopersicon esculentum Mill. (D.W. Kretchman)
David A. Seitz, MS	Plan B (W.A. Gould)
Shanta M. Shakya, MS	Effects of Environment and Flowering Maturity at Pollination on Hybrid Seed Production and Selfing Contamination of Several Tomato Genotypes (J.R. Geisman & J.Scott)
James G. Shover, MS	Factors Affecting the Oil Content of Potato Chips. (W.A. Gould)
Yusef Siraj-Ali, MS	Identification of Factors Affecting Tomato Transplant Quality and Their Relationship to Growth, Development and Fruiting. (D.W. Kretchman)
Duane M. Smith, MS	The Heredity of Efficiency of Potassium Utilization in Lycopersicon esculentum Mill. (Tomato). (T.A. Fretz)
Peter G. Snow, MS	Deacidification of White Table Wines Through the Partial Fermentation with Schizosaccharomyces pombe. (J.F. Gallander)
Ted E. Stambaug, MS	The Effect of Various Processing Methods on the Quality and Sterility of Canned Dice Tomatoes (W.A. Gould)
Abdellfattah A. Taha, PhD	Physiological Responses of the Tomato (Lycopersicon esculentum Mill) Treated with Ethephon (D.W. Kretchman)
Bradley H. Taylor, MS	The Influence of Summer Pruning on Photosynthesis, Transpiration, Dry Weight & Leaf Area of Young Delicious Apple Trees (D.C. Ferree)
Bradley H. Taylor, PhD	Influence of Summer Pruning & Fruit Cropping on Growth, Carbohydrate and Nutritional Status of Apple Trees (D.C. Ferree)

Name & Degree	Theses or Dissertation Title (Adviser)
Masatoshi Usami, MS	Prediction of Canned Tomato Juice Color from Raw Tomato Color. (W.A. Gould)
Ibrahim Wahem, MS	Quality Evaluation of 7 Ohio Potato Cultivars for Baking (W.A. Gould)
Ibrahim Wahem, PhD	Canning Tomatoes for Salad Uses (W.A. Gould)
Rosaline Chang-Yu-Wang, MS	Preservation of Ascorbic Acid in Tomato Juice (D. Crean)
Audrey C. Wanstreet, MS	In vitro Inoculation of Tissue Culture Propagated Malus Shoot Tips with Erwinia amylovora. (D.R. Lineberger)
Jane C. Warner, MS	A Survey Study of "Master Gardener" Cooperative Extension Service Program (P.C. Kozel)
James O. Wolk, MS	The Effects of Defoliation on Yield, Quality, & Photosynthetic Rate of the Tomato (Lycopersicon esculentum Mill). (D.W. Kretchman)
Hsiu Mei Wu, MS	Processing and Textural Properties of Soy-Cheese Whey Curd Formulations (A.C. Peng)
John Wynstra, MS	Pigmented Polyethylene Film for Nursery Crop Storage. (E.M. Smith, Jr.)
Salmath Yusef, MS	The Effects of Antioxidants on the Keeping Quality of Potato Chips (W.A. Gould)
Virginia Zrebiec, MS	Flower Induction, Initiation, and Development in Kalanchoe and the Effects of Night Temperature and Photoperiod on Flowering (H.K. Tayama)

FACULTY - DEPARTMENT OF HORTICULTURE

July 1, 1983

Name Year Appointed (Current Rank)	Location	Graduate Faculty Status*	Degrees	Assignment R	T	E	Area of Specialization
Bash, W.D. 1983 (Asst. Prof.)	Columbus	I	BS OSU '59 MS OSU '61 PhD OSU '65	25	75		Food Processing
Bauerle, W.L., Jr. 1970 (Assoc. Prof.)	Wooster	II	BS Del Val '64 MS Rutgers '66 PhD Cornell '70	100	-	-	Greenhouse Vegetable Crops
Berry, S.Z. 1967 (Professor)	Wooster	III	BS Cornell '52 MS UNH '53 PhD U of CA '57	100	-	-	Processing Tomato Variety Development
Brooks, W.M. 1958 (Professor)	Columbus	I	BS OU '54 MS OSU '57	-	-	100	Commercial Outdoor and Greenhouse Vegetable Crop Production
Buscher, F.K. 1956 (Professor)	Wooster	-	BS OSU '60 MS OSU '65	-	-	100 (Area Agent)	Nursery Crop Production
Cahoon, G.A. 1963 (Professor)	Wooster	III	BS Utah SU '50 PhD U of CA '54	55	-	45	Grape Production and Fruit Nutrition
Caldwell, J.L. 1955 (Professor)	Columbus	-	BS OSU '53 MS OSU '54	-	-	100	Landscape Horticulture Home Grounds
Donoho, C.W., Jr. 1960-67 & 1973 (Professor)	Wooster	III	BS U of KY '52 MS NC St. U. '58 PhD MSU '60	-	-	- Assoc. Director OARDC	Tree Fruit Physiology

Name Year Appointed (Current Rank)	Location	Graduate Faculty Status*	Degrees	Assignment R	T	E	Area of Specialization
Faber, W.R. 1980 (Asst. Prof.)	Columbus	-	BS OSU '74 MS OSU '76 PhD NCSU '80	50	-	50	Floricultural Crop Production
Ferree, D.C. 1971 (Professor)	Wooster	III	BS Penn St. '65 MS U of MD '68 PhD U of MD '69	100	-	-	Tree Fruit Physiology and Production Systems
Funt, R.C. 1978 (Assoc. Prof.)	Columbus	II	BS Del Val '68 MS Penn St. '71 PhD Penn St. '74	15	-	85	Fruit Extension Specialist
Gallander, J.F. 1963 (Professor)	Wooster	III	BS OSU '60 PhD OSU '64	80	-	20	Food Technology, Enology
Geisman, J.R. 1963 (Prof., Asst. Chrm.)	Columbus	III	BS OSU '55 MS OSU '56 PhD OSU '58	30	70	-	Food Technology Waste Disposal and Utilization
Gorske, S.F. 1978 (Assoc. Prof.)	Columbus	III	BS Purdue '73 MS U of IL '75 PhD U of IL '77	45	55	-	Weed Control & Vegetable Physiology
Gould, W.A. 1947 (Professor)	Columbus	III	BS U of NH '42 MS OSU '47 PhD OSU '49	50	50	-	Food Processing & Technology Emphasis on Vegetables
Hassell, R.L. 1980 (Asst. Prof.)	Celeryville Muck Crops Branch	-	BS BYU '77 MS Cornell '79	50	-	50	Muck Crops - Vegetable Crops Extension Specialist
Hill, R.G., Jr. 1950 (Prof., Assoc. Chrmn.)	Wooster	III	BS U of MD '45 MS U of MD '48 PhD U of MD '50	75	10	15	Stone and Small Fruits Culture

Name Year Appointed (Current Rank)	Location	Graduate Faculty Status*	Degrees	Assignment R	T	E	Area of Specialization
Kawase, M. 1966 (Professor)	Wooster	III	BS U of Tokyo '51 MA U of Tokyo '54 MS U of MN '58 PhD Cornell '60	100	-	-	Physiology & Introduction of Ornamental Crops
Kretchman, D.W. 1966 (Professor)	Wooster	III	BS MSU '53 MS MSU '54 PhD MSU '58	85	15	-	Vegetable Crops Physiology and Production
Lineberger, R.D. 1977 (Assoc. Prof.)	Columbus	II	BS NC St. U. '70 MS Cornell '74 PhD Cornell '77	40	60	-	Tissue Culture Stress Physiology
Peng, A.C. 1968 (Professor)	Columbus	III	BS WA St. U. '61 MS MSU '62 PhD MSU '65	50	50	-	Plant Proteins & Lipids
Peterson, J.C. 1978 (Assoc. Prof.)	Columbus	II	BS U RI '74 PhD Rutgers '78	60	40	-	Floral Crop Production
Reisch, K.W. 1953 (Professor)	Columbus	III	BS U of CT '52 MS OSU '53 PhD OSU '56	- Assoc. Dean College of Agr.	-	-	Landscape Horticulture Nursery Crop Management
Robertson, J.L. 1974 (Professor)	Columbus	III	BS Purdue '70 MS Purdue '72 PhD Purdue '74	60	40	-	Floral & Nursery Crop Marketing - Economics
Rollins, H.A., Jr. 1970 (Prof., Chrmn.)	Columbus	III	BS U of CT '50 MS U of NH '51 PhD OSU '54	25	50	25	Tree Fruit Physiology
Smith, E.M., Jr. 1967 (Professor)	Columbus	II	BS U of CT '58 MS OSU '64 PhD OSU '67	25	-	75	Nursery Crop Production, Herbicides, Storage and Nutrition

Name Year Appointed (Current Rank)	Location	Graduate Faculty Status*	Degrees	Assignment R	T	E	Area of Specialization
Still, S.M. 1979 (Assoc. Prof.)	Columbus	III	BS U of CT '66 MS MSU '67 PhD MSU '70	25	75	-	Floral Crop Production Post-Harvest Physiology
Struve, D.K. 1980 (Asst. Prof.)	Columbus	II	BS U of WI '73 MS Rutgers '76 PhD NCSU '80	40	60	-	Landscape Horticulture Woody Plant Materials
Sydnor, T.D. 1972 (Assoc. Prof.)	Columbus	III	BS VPI '62 PhD NCSU '72	40	60	-	Landscape Horticulture Shade Trees
Tayama, H.K. 1964 (Professor)	Columbus	III	BS U of IL '58 MS U of IL '59 PhD OSU '63	20	80	-	Floral Crop Production
Utzinger, J.D. 1967 (Professor)	Columbus	II	BS OSU '54 MS OSU '58 PhD OSU '69	-	40	60	Home Horticulture Fruits & Vegetables Youth Programs
Wittmeyer, E.C. 1950 (Professor)	Columbus	-	BS OSU '48	-	-	100	Commercial Vegetable Production

* See pg. for an explanation of the graduate faculty categories.

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